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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,185	07/23/2003	John M. Popovich	12,529	8239

2675 7590 08/02/2005

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EXAMINER	
GRAYBILL, DAVID E	

ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/625,185	POPOVICH, JOHN M.
	Examiner	Art Unit
	David E. Graybill	2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-56* is/are pending in the application.

4a) Of the above claim(s) *27 and 29* is/are withdrawn from consideration.

5)☒ Claim(s) *56* is/are allowed.

6)☒ Claim(s) *1-26,28 and 30-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 July 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2 pages*. 6/18/2004 / 3/31/2004
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features of claim 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "111" and "112" have each been used to designate more than one part. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-26, 28 and 30-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is insufficient antecedent basis for the following language:

Claim 1, "the conductors that provide power for LED operation";

Claim 3, "the wires";

Claim 10, "the screen";

Claim 11, "the electrical combination";

Claim 17, "the path of light from the LEDs";

Claim 21, "said lead or leads";

Claim 24, "the diodes and screen";

Claim 37, "said primary wire clamp," "said secondary wire clamp," "said tertiary wire clamp";

Claim 42, "said protection means."

Claims 3, 10 and 42 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are those between the following:

Claim 3, the wires and the elements of claim 1;

Claim 10, the screen and the elements of claim 9;

Claim 42, said protection means and the elements of claim 1.

Claims 3, 10, 21, 24-26, 28, 30-35, 37-40 and 42-44 have not been rejected over the prior art because, in light of the 35 U.S.C. 112 rejections supra, there is a great deal of confusion and uncertainty as to the proper interpretation of the limitations of the claims; hence, it would not be proper to reject the claims on the basis of prior art. As stated in In re Steele, 305 F.2d 859, 134 USPQ 292 (CCPA 1962), a rejection should not be based on considerable speculation about the meaning of terms employed in a claim or assumptions that must be made as to the scope of the claims. Also see In re Wilson, 424 F.2d 1382, 165 USPQ 494 (CCPA 1970) (if no reasonably definite meaning can be ascribed to certain claim language, the claim is indefinite, not obvious). See also MPEP 2143.03 and 2173.06.

In the rejections infra, generally, reference labels are recited only for the first recitation of identical claim elements.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-8, 11-14, 16, 36, 41, 42, 45, 46, 49, 52-54, and 55 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Yokoyama (5134615).

In the English abstracts, translation and drawings, Yokoyama discloses the following:

An LED array assembly, comprising in combination: a) a grid of electrical conductors 11, 12, b) light emitting diodes 6 in association with the grid and in electrical communication with the conductors that provide power for LED operation, c) the grid operable to receive heat from the diodes during diode operation, and the grid inherently configured for passing coolant fluid for transfer of heat to the fluid; wherein the electrical conductors comprise insulated "pre-insulation" metal wires that act as electrical and thermal conductors and that also serve as structural load conductors, for arrays of such diodes; wherein the conductors comprise woven wires; wherein the array has at least one of the following: curvature wherein the ii) complex shape iii) compliant configuration iv) flexibility; means (at least the array exterior surfaced) inherently to effect and/or guide flow of coolant fluid through or along the array; wherein the grid is inherently dark (transmitting only a portion of light) inherently to increase viewing contrast with LEDS during their operation; one of the following: i) a

substrate 2 above which LEDS are placed ii) a superstrate associated with the array and LEDS to provide structural strength to the assembly; wherein the electrical combination includes primary conductors 11 extending generally in one direction, and secondary conductors 12 extending generally in another direction, the LEDS mounted on the primary conductors, and having terminals 7 extending to the secondary conductors for electrical association thereto; wherein the secondary conductors are configured to extend above and/or below the primary conductors; wherein the secondary conductors are characterized by one of the following: i) substantial spacing therebetween to pass coolant fluid through the grid, ii) lack of substantial spacing therebetween, to pass coolant fluid parallel to the grid, iii) cross sections which are substantially less than the cross sections of primary conductors which support diodes, iv) junctions with diode wires; wherein certain of the conductors include multiple wire strands 11, 12; means (at least the array exterior surface) for displacing and conducting coolant to one side of the screen, to flow through or adjacent to the screen; wherein certain of said conductors that provide power for diode operation comprise first, second and third pairs of wires inherently to transmit electrical energization to red, green and blue LED pixels, respectively; protective means 2 at one of the following: at the front of the grid; at the rear of the grid; iii) at both the

front and rear of the grid; wherein said protection means includes at least one metallic plate; wherein the diodes inherently are removably supported by the grid; i) diode emission control electronics within diode packages ii) or inherent diode emission control electronics 7, 11, 12 at or proximate an edge or edges of the grid; a conduit "pre-insulation" for extensions of the conductors, outside the grid; wherein the diodes comprise packages inherently having adjustable operative connection to the conductors characterized by one of the following: i) rotatable adjustability about one axis ii) rotatable adjustability about two axes; wherein the diodes in the array have different positions (in the array) of angularity.

An LED array assembly, comprising in combination: a) a grid of electrical conductors, b) light emitting diodes in association with the grid and in electrical communication with the conductors that provide power for LED operation, c) there being LED structure "solder" inherently allowing rotary adjustment of at least some LEDS relative to conductors on which those LEDS are supported (e.g. via desoldering the LED structure); wherein said rotary adjustment is characterized by one of the following: about an axis or axes defined by the LED or LEDS ii) about a conductor axis or axes about both i) and ii) above.

To further clarify the disclosures of the grid inherently configured for passing coolant fluid for transfer of heat to the fluid; means (the array exterior surfaced) inherently to effect and/or guide flow of coolant fluid through or along the array; the grid is inherently dark (transmitting only a portion of light) inherently to increase viewing contrast with LEDS during their operation; wires inherently to transmit electrical energization to red, green and blue LED pixels; the diodes inherently are removably supported by the grid; inherent diode emission control electronics; and structure "solder" inherently allowing rotary adjustment of at least some LEDS relative to conductors on which those LEDS are supported, it is noted that the terms, "for passing coolant fluid for transfer of heat to the fluid," "to effect and/or guide flow of coolant fluid through or along the array," "to increase viewing contrast with LEDS during their operation," "to transmit electrical energization to red, green and blue LED pixels," "removably supported by the grid," "diode emission control electronics," and, "allowing rotary adjustment of at least some LEDS relative to conductors on which those LEDS are supported," are statements of intended use of the product that does not appear to result in a structural difference between the claimed product and the product of Yokoyama. Further, because the product of Yokoyama appears to have the same structure as the claimed product, it

appears to be inherently capable of being used for the intended uses, and the statements of intended use do not patentably distinguish the claimed product from the product of Yokoyama. The manner in which a product operates is not germane to the issue of patentability of the product; Ex parte Wikdahl 10 USPQ 2d 1546, 1548 (BPAI 1989); Ex parte McCullough 7 USPQ 2d 1889, 1891 (BPAI 1988); In re Finsterwalder 168 USPQ 530 (CCPA 1971); In re Casey 152 USPQ 235, 238 (CCPA 1967). Also, "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim."; Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). And, "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims."; In re Young, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 136 USPQ 458, 459 (CCPA 1963)). And, claims directed to product must be distinguished from the prior art in terms of structure rather than function. In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does [or is intended to do]." Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

To further clarify, in the limitation, "wherein the diodes in the array have different positions of adjusted angularity," although Yokoyama does

not appear to explicitly disclose the process limitation "adjusted," the diodes of Yokoyama inherently possesses any structural characteristics imparted by the process limitation. See In re Fitzgerald, Sanders, and Bagheri, 205 USPQ 594 (CCPA 1980).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 9, 15, 17-20, 22, 23, 46-48, 50-51, 53 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoyama as applied to claims 1, 2, 4-8, 11-14, 16, 36, 41, 42, 45, 46, 49 and 52-55, and further in combination with Yasukawa (6831305).

Yokoyama does not appear to explicitly disclose a first sheet facing the diodes, to pass light emitted by the diodes.; a transparent panel extending in the path of light from the LEDS; wherein each diode includes a light emitter or emitters, a transparent container having a window area, the emitter supported within the container, and a reflector within the container to reflect emitted light toward said window; an electrical lead or leads extending with helical configuration within the container to said emitter or emitters; wherein the lead or leads has or have a generally rectangular cross

section, and support the emitter or emitters; wherein said lead or leads include wires associated with a red and/or green and/or blue emitter; wherein multiple of said diodes have their container windows facing in the same or selected directions; a light reflecting mirror or mirrors within diode packages; and one or more of the following: i) a parabolic mirror ii) dual mirrors within a package ii) a parabolic trough forming mirror or mirrors.

Nonetheless, at column 1, lines 54-56; column 3, lines 42-58; column 4, line 60 to column 5, line 8, Yasukawa discloses a first sheet 43 facing the diodes, to pass light emitted by the diodes; a transparent panel 43 extending in the path of light from the LEDS; wherein each diode includes a light emitter 1 or emitters, a transparent container 40 having a window 43 area, the emitter supported within the container, and a reflector 35 within the container to reflect emitted light toward said window; an electrical lead 33 or leads extending with configuration within the container to said emitter or emitters; wherein the lead or leads has or have a cross section, and support the emitter or emitters; wherein said lead or leads include wires 15 associated with an emitter; a light reflecting "mirror" or mirrors within diode packages; and one or more of the following: i) a parabolic mirror ii) dual mirrors within a package ii) a parabolic trough forming mirror or mirrors.

In addition, it would have been obvious to combine this disclosure of Yasukawa with the disclosure of Yokoyama because it would facilitate provision of the light emitting device of Yokoyama having high reliability.

In addition, the combination of Yokoyama and Yasukawa discloses that the multiple of said diodes inherently have their container windows facing in the same or selected directions. To further clarify, although Yokoyama and Yasukawa do not appear to explicitly disclose the process limitation "selected," the windows of the combination of Yokoyama and Yasukawa inherently possesses any structural characteristics imparted by the process limitation. See In re Fitzgerald, Sanders, and Bagheri, 205 USPQ 594 (CCPA 1980).

Also, Yokoyama and Yasukawa do not appear to explicitly disclose helical configuration or a generally rectangular cross section. Notwithstanding, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose these particular dimensions because applicant has not disclosed that, in view of the applied prior art, the dimensions are for any purpose, produce any result, or are otherwise unexpected or critical, and it appears prima facie that the process would possess utility using another dimension. Indeed, it has been held that

mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

To further clarify, Yokoyama and Yasukawa disclose wherein said lead or leads include wires 15 inherently associated with a red and/or green and/or blue emitter because the definition of the term *associated* is: *to be brought together or into relationship in any of various intangible ways (as in memory or imagination)*, and such a mental process does not structurally limit the claims. Further, although Yokoyama and Yasukawa do not appear to explicitly disclose the process limitation "associated," the wires of the combination of Yokoyama and Yasukawa inherently possesses any structural characteristics imparted by the process limitation. See In re Fitzgerald, Sanders, and Bagheri, 205 USPQ 594 (CCPA 1980).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoyama as applied to claim 1, and further in combination with Tanisawa (5478778).

Yokoyama does not appear to explicitly disclose balls or beads seated on the conductors to act as spacers.

Still, at column 1, lines 11-47; and column 3, lines 1-67, Tanisawa discloses balls or beads 23 seated on conductors 22 inherently to act as spacers. Moreover, it would have been obvious to combine this disclosure of Tanisawa with the disclosure of Yokoyama because it would enable precise alignment of the diodes Yokoyama.

Claim 56 is allowed.

Claims 50 and 51 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The art made of record and not applied to the rejection is considered pertinent to applicant's disclosure. It is cited primarily to show inventions similar to the instant invention.

Any other telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.
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David E. Graybill
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D.G.
21-Jul-05